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EXAMINER

MILLS, DONALD L

ART UNIT PAPER NUMBER

2662

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/557,600

Applicant(s)

DU, YONGGANG

Examiner

Donald L Mills

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 3-8, and 10-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 10, and 12, the claims specify *derive a packet* (For example, see claim 1, line 14.) It is unclear from the context of the claim if the derived *a packet* is an entirely new packet that is not equivalent to any previous packet, or if the derived *a packet* is one of the previously combined several packets. The Examiner believes the term “extracting” would be more appropriate. For the purpose of this examination, the Examiner will interpret this as *extract a packet from one of said combined several packets*.

Regarding claim 1, 10, and 12, the claims specify *of said transmitted packets* (For example, see claim 1, line 15.) It is unclear from the context of the claim whether *said transmitted packets* refers to *a packet* or the *superpacket*. For the purpose of this examination, the Examiner will interpret this as referring to the extracted packet.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1, 3, 4, 9, 10, 12, 13, 14, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. (US 6,442,149 B1), hereinafter referred to as Nakano, in view of Watanabe et al. (US 6,084,888), hereinafter referred to as Watanabe and, further, Nakano in view of Lin et al. (US 5,742,599), hereinafter referred to as Lin.

Regarding claims 1, 9, 10, and 12, Nakano discloses a transmission system between a base station and switching center, which comprises:

*A network with several network clusters each having of at least one wireless node* (Referring to Figures 2A and 2B, wireless network with base stations **101-1 ... 101-k**), *and at least one fixed network node, each of said at least one fixed network node being coupled to a respective wireless network node of said at least one wireless network node via a respective wire interface* (Referring to Figure 1, terminal **508** (fixed network node) connected via wired interface **512** to wireless terminal station **522** (wireless network node)), *the wireless network node including a transmitter/receiver for the wired transmission/reception of packets in time slots of given length in a time multiplex process* (Referring to Figures 2A and 2B, base station **101-1** comprises a transmitter/receiver **102** for the transmission of ATM cells in a TDM process. See column 2, lines 54-57. The Examiner infers that for CBR traffic the ATM cells are formed by taking a section of data and breaking it down into smaller sections to be transmitted, which is the equivalent of claimed invention of taking large sections of data and breaking them down for transmission during bandwidth opportunities,) *the variable length of the packets having at least a value which is smaller than the length of the fixedly given time slot* (Referring to Figures 2A and

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2B, the ATM cells are transmitted in frames where the individual cells are smaller than the length of the frame. See column 2, lines 53-56.)

*Configuring the transmitting wireless network node of the wireless network nodes to combine several packets into a superpacket and transmit the superpacket to all wireless network nodes authorized for the data transmission via a point-to-multipoint link* (Referring to Figures 2A and 2B, base station 101-1 utilizes ATM cell assembler/disassembler 103 to place ATM cells in a frame for transmission to the mobile services switching center 107, which is coupled to base stations 101-1 ... 101-k and ATM switch 106. See column 3, lines 34-43.)

*Designing the receiving wireless network node of the wireless network nodes for after the reception of the superpacket to derive a packet from the superpacket if the destination of the packet of the transmitted packet lies in a network cluster corresponding to said receiving wireless network node* (Referring to Figures 2A and 2B, the mobile services switching center 107 receives the transmitted frame 200 and disassembles the frame into ATM cells, since the mobile services switching center 107 is the intended destination of the cells. See column 3, lines 39-44.)

Nakano does not disclose *a transmitter for the wireless transmission of packets in time slots.*

Watanabe teaches the wireless transmission of ATM cells between wireless relay station 523 and wireless relay station 521 (See column 3, lines 45-46.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement wireless transmission of Watanabe in the system of Nakano. One of ordinary skill in the art would have been motivated to do so in order to support transmission

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between base stations in a system where a centralized controller is not utilized or available. An added benefit of doing so would allow greater flexibility in the placement of wireless base stations.

Nakano does not disclose *configuring the transmitting wireless network node to segment the superpacket into cells when the length of the superpacket exceeds the length of the fixedly given time slots and inserting the cells into several time slots, and configuring the receiving wireless network node which receives the cells for forming the superpacket from the cells.*

Lin teaches an ATM card 24 which utilizes the SAR sub-layer to segment the typically large data packets from the ATM higher layer AAL-5 into ATM cells (See column 5, lines 63-65.) Lin further teaches recombining the ATM cells into larger AAL-5 PDUs (See column 6, lines 2-4.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the cell segmentation and reassemble of MPEG traffic of Lin in the time-slot based ATM transmission system of Nakano. One of ordinary skill in the art would have been motivated to do so in order to transmit MPEG data from a base station to a mobile switching center. An added benefit of doing so would allow the wireless transmission of constant bit rate encoded MPEG traffic streams to be transmitted between wireless and wired users.

Regarding claims 3 and 13, the primary reference further teaches *the transmitting wireless node is designed for inserting the cells into several time slots of a frame or into one or several time slots of several frames* (Referring to Figure 2A and 2B, base station 101-1 places the

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ATM cells on the cell slots for transmitting the ATM cells as a frame. See column 3, lines 34-39.)

Regarding claims 4 and 14, the primary reference further teaches *one of the wireless network nodes from among the wireless network nodes which form a wireless network is constructed so as to form a central node which is designed to control the radio traffic* (Referring to Figures 2A and 2B, mobile services switching center **107** manages the connected base stations **101-1...101-k** thereby managing the radio traffic. See column 2, lines 60-63.)

Regarding claims 19-21, the primary reference further teaches *the transmitting wireless network node is designed for inserting the cells into several time slots of several frames* (Referring to Figures 2A and 2B, base station **101-1** places the ATM cells on the cell slots of several frames for transmitting the ATM cells. See column 3, lines 34-39.)

5. Claims 5, 6, 11, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. (US 6,442,149 B1) in view of Watanabe et al. (US 6,084,888) and Lin et al. (US 5,742,599), and further in view of Pasternak et al. (US 5,936,949), hereinafter referred to as Pasternak.

Regarding claims 5 and 15, the limitations of parent claims have been addressed above.

Nakano does not disclose *designing the receiving wireless network node to compare the address identification in the control field of the packet with an address which belongs to the associated network cluster and which identifies the destination.*

Pasternak teaches checking the overhead address field to determine whether the received cell should be utilized (See column 13, lines 52-54,) and maintaining a connection table for

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virtual circuits (See column 14, lines 39-40.) Pasternak further teaches that delegating as many functions as possible to the base station, in a point-to-multipoint system, is favorable because it eliminates the need to replicate the same function in all terminals in a network (See column 1, lines 63-67.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the address resolution and connection table of Pasternak in the base station of Nakano utilizing the wireless transmission of Watanabe. One of ordinary skill in the art at the time the invention was made would have been motivated to do so in order to centralize the transfer of data in order to increase system efficient for multi-cell transmission.

Regarding claims 6 and 16, the limitations of parent claims have been addressed above.

Nakano does not disclose *the receiving wireless network node containing a table for the storage of all addresses of the associated network cluster.*

Pasternak teaches checking the overhead address field to determine whether the received cell should be utilized (See column 13, lines 52-54,) and maintaining a connection table for virtual circuits (See column 14, lines 39-40.) Pasternak further teaches that delegating as many functions as possible to the base station, in a point-to-multipoint system, is favorable because it eliminates the need to replicate the same function in all terminals in a network (See column 1, lines 63-67.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the address resolution and connection table of Pasternak in the base station of Nakano utilizing the wireless transmission of Watanabe. One of ordinary skill in the



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art at the time the invention was made would have been motivated to do so in order to centralize the transfer of data in order to increase system efficient for multi-cell transmission.

Regarding claim 11, the limitations of parent claims have been addressed above.

Nakano does not disclose *the receiving wireless network node derives a relevant packet of the packets from the superpacket, the relevant packet having said address designation belonging to the associated network cluster*

Pasternak teaches checking the overhead address field to determine whether the received cell should be utilized (See column 13, lines 52-54,) and maintaining a connection table for virtual circuits (See column 14, lines 39-40.) Pasternak further teaches that delegating as many functions as possible to the base station, in a point-to-multipoint system, is favorable because it eliminates the need to replicate the same function in all terminals in a network (See column 1, lines 63-67.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the address resolution and connection table of Pasternak in the base station of Nakano utilizing the wireless transmission of Watanabe. One of ordinary skill in the art at the time the invention was made would have been motivated to do so in order to centralize the transfer of data in order to increase system efficient for multi-cell transmission.

6. Claims 7, 8, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. (US 6,442,149 B1) in view of Watanabe et al. (US 6,084,888) and Lin et al. (US 5,742,599), and further in view of Freeburg et al. (US 5,940,381) hereinafter referred to as Freeburg.

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Regarding claims 7 and 17, the limitations of parent claims have been addressed above.

Nakano does not disclose *a management system which controls at least one of the wireless network nodes such that the at least one wireless network node provides the establishment of point-to-point connections only instead of point-to-multipoint connections.*

Freeburg teaches a method of traffic management depending on the flow of data that utilizes a unidirectional point-to-point connection for an upstream connection (See column 5, lines 26-37.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the traffic management system of Freeburg in the base station of Nakano utilizing the wireless transmission of Watanabe. One of ordinary skill in the art at the time the invention was made would have been motivated to do so in order to minimize data processing for the wireless transmission of a group of ATM cells.

Regarding claims 8 and 18, the limitations of parent claim1 have been addressed above.

Nakano does not disclose *sending a key via a point-to-multipoint connection and for sending coded data via a point-to-point connection.*

Freeburg teaches a method of traffic management depending on the flow of data that utilizes a unidirectional point-to-multipoint connection for a downstream connection including the transmission of overhead and a unidirectional point-to-point connection for an upstream connection including the transmission of data payload in a base station to minimize processing (See column 5, lines 26-37.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the traffic management system of Freeburg in the base station of Nakano

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utilizing the wireless transmission of Watanabe. One of ordinary skill in the art at the time the invention was made would have been motivated to do so in order to minimize data processing for the wireless transmission of a group of ATM cells.

### ***Response to Arguments***

7. Applicant's arguments filed September 20, 2004 have been fully considered but they are not persuasive.

#### **Rejection Under 35 USC § 112**

On page 9 of the remarks, regarding claims 1, 10, and 12, Applicant believes the amended claims overcome the rejection. The Examiner respectfully disagrees. Regarding claims 1, 10, and 12, the claims specify *derive a packet* (For example, see claim 1, line 14.) It is unclear from the context of the claim if the derived *a packet* is an entirely new packet that is not equivalent to any previous packet, or if the derived *a packet* is one of the previously combined several packets. The Examiner believes the term "extracting" would be more appropriate.

#### **Rejection Under 35 USC § 103**

On page 11 of the remarks, regarding claims 1, 10, and 12, Applicant argues none of the references taken alone or in combination disclose or suggest *a network with several network clusters each having of at least one wireless node and at least one fixed network node, each of said at least one fixed network node being coupled to a respective wireless network node of said at least one wireless network node via a respective wire interface the wireless network node including a transmitter/receiver for the wired transmission/reception of packets in time slots of given length in a time multiplex process*. The Examiner respectfully disagrees. Watanabe

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discloses wireless network with base stations **101-1** ... **101-k** (network clusters) and terminal **508** (fixed network node) connected via wired interface **512** to wireless terminal station **522** (wireless network node) (See Figures 1, 2A, and 2B.) And, each base station **101-1** comprises a transmitter/receiver **102** for the transmission of ATM cells in a TDM process (See column 2, lines 54-57.) The Examiner infers that for CBR traffic the ATM cells are formed by segmenting data into smaller portions for transmission during a period of time, which is equivalent to the claimed invention's break down of large segments of data for transmission during available bandwidth. Therefore, Watanabe discloses *a network with several network clusters each having of at least one wireless node and at least one fixed network node, each of said at least one fixed network node being coupled to a respective wireless network node of said at least one wireless network node via a respective wire interface the wireless network node including a transmitter/receiver for the wired transmission/reception of packets in time slots of given length in a time multiplex process.*

On page 12 of the remarks, regarding claims 3-8, 11, and 13-21, Applicant argues these claims are allowable for the same reasons stated above. The Examiner respectfully disagrees for the same reasons stated above.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L Mills whose telephone number is 571-272-3094. The examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

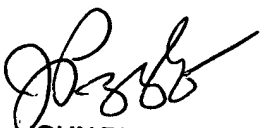
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Donald L Mills



January 10, 2005



**JOHN PEZZLO**  
**PRIMARY EXAMINER**